Fats, Oils, and Grease (FOG) Training

June 23 and 25, 2020

Module 1: Building a Business Case for a FOG Program

Module 1 is approved for 4 hours of core WW or C hours, use number 2020.091

Registration and Introductions

Data Needs

1. What data do you need?
2. How do you collect the data?
3. How is the data stored?
4. Can the data be easily analyzed?

Excess Line Maintenance Costs

1. How many lineal feet of collection system are being cleaned in excess of the normal cleaning cycle (usually once every three to five years)?
2. What is the City's cost per foot to clean lines?
3. Is traffic control necessary, and if so, what is the cost?
4. Where is the FOG disposed of, and what is the cost per pound?
5. How often are FOG lines cleaned?
6. What are equipment and staffing needs?
7. Emergency line cleaning (after hours, overtime pay)

Pump stations are wonderful interceptors!

1. How many pump stations are impacted by FOG?
2. What is the cost to clean FOG from a pump station?
3. How many air relief valves are being impacted by FOG?
4. What is the cost to clean the air relief valves?
5. What is the efficiency loss for failure to clean air relief valves?
6. Is excess energy being used by the pumps due to FOG impacts?

Excess Treatment Plant Operational Costs

1. What is the estimated operational cost to treat one pound of COD?
2. Water Environment Research Foundation estimates that one pound of FOG equals ½ pound of COD
3. Removing grease on the primary, excess scum pump maintenance costs
4. Foaming at the aeration basin

Cost Estimate for Implementing a FOG Program

1. How many Food Service Establishments (FSEs) are in the City?
2. How many FSEs have been thoroughly inspected?
3. What data has been input for each FSE?

Staff Costs

1. How many FSEs are in your service area?
2. How many FSE inspections can be completed in one day?

3. How many Full Time Employees (FTE) will be needed to initiate the program?
4. How many FTE will be needed to maintain the program?

FOG Program Examples from Multiple Municipalities

What Staffing Level is Appropriate?

1. Initial FSE inspections, setting up FOG Program estimate 3-4 hr/FSE
2. Efficient FOG program maintenance inspections estimate 1 hr/FSE
3. Include travel time, inspection data entry time
4. Include pump-out data review time
5. Estimate that 10% FSEs will need re-inspection more frequently than once per year

Program Development Costs

1. Which staff will be involved in program development?
2. Case Study: One sewer district had a Division Manager (part time), a Program Manager (part time), a communication specialist (part time) and an Environmental Specialist (full time) involved in program development for a year

Planning

1. Which staff will be involved in program development?
2. Multiple municipal examples

Program Development

1. Put legal authority into place
2. Identify all stakeholders
3. Identify all “moving parts” of the program
4. Implement, gather data, analyze, repeat

Data Needed

1. FSE Data
2. Utility Data

Stakeholder Involvement Costs

1. Have you identified the stakeholders?
2. Have meetings been scheduled to discuss the FOG Program with stakeholders?
3. Has the business case been presented to the municipal leadership?

Cost-Benefit Analysis

1. Existing costs to municipality if no FOG program is implemented
2. Cost to develop and implement FOG program
3. Cost to maintain a well-managed FOG program
4. Proposed savings due to well-managed FOG program
5. Does cost for FOG Program outweigh existing costs without Program?

Data Acquisition & Management

1. What is Important to Your City Leaders?
2. Excess costs for FOG maintenance?
3. Care of small businesses?
4. Reputation of the City or Sewer District?
5. Example of a Business Case Presentation
6. Cost-benefit Summary

Examples of Cost-Benefit Analysis Presentations to Municipal Leadership

Triage: *The process of determining priorities based on the severity of impact.*

1. Focused Effort
2. New construction voluntary plan review
3. Inspection and follow-up

Approaching Enforcement

1. Broad Authority
2. Time consuming and potentially expensive
3. Cost Recovery for SSOs, Illicit discharges or Cleaning when source(s) identified

Preferred Pumper Standards

1. Follows approved best practices for interceptor service
2. Submits schedule of interceptor maintenance to sewer agency seven days in advance
3. Submits FOG pump-out reports to sewer agency within 10 days of pump-out

Case Study

1. City of Wilsonville is the fastest growing in the Portland metropolitan area
2. City FOG lines being cleaned 4 to 5 times per year
3. Wastewater Treatment plant had sever foaming in the aeration basins
4. Plant received slug loads of grease between midnight & 6:00 am daily

One year after implementing a FOG Program...

5. Operators only needed to wash down basins and clean-up grease every two weeks
6. Foaming ceased completely and City experienced no further pass through or blinding of disinfection system.
7. FOG Slug loads also ceased completely
8. FOG lines went from quarterly cleaning to inspection every six months and cleaning if needed
9. Required FSEs to contract with Preferred Pumper

Evaluation and Needs Assessment for Module 1

Lunch on your own!

Module 2: Implementing an Effective FOG Abatement Program

Module 2 is approved for 4 hours of core WW or C hours, use number 2020.092.

You have all the pieces in place, because you've completed the following:

1. You have support from City Leadership because you've built a good business case for a FOG program
2. You've met with affected stakeholders, and have constructed a consensus-based program
3. Your Sewer Use Ordinance has been modified to include the FOG program elements
4. You have an approved Enforcement Response Plan
5. You have chosen or built a good FOG Information Management System (FOG IMS)

Now to Implement the Program, here are the "triage" elements needed:

1. Complete an initial survey of all FSEs
    a. Fixed Location Address
    b. Type of FSE
    c. Estimate of FOG Loading (Very high, High, Medium or Low)
    d. Type of FOG Pretreatment Device (interceptor)
    e. Size of interceptor
    f. Fixtures and drains connected to interceptor(s)
    g. Maintenance frequency for interceptor
2. Input all "fixed facility" data into FOG IMS
3. Identify all FOG lines in collection system
4. Identify all pump stations impacted by FOG

Focus abatement efforts based on the triage data:

1. Identify which FSEs are connected to each FOG line, or discharge into a FOG-impacted pump station
2. Rate each FSE by FOG loading potential
3. Rate each FSE by whether all fixtures and drains are connected to the interceptor

Triage means focusing efforts on the very high or high FOG loaders connected to FOG lines

Very high and High-loading FSEs on FOG lines that don't have all fixtures and drains connected to an interceptor:

1. Have FSE implement and maintain, in a demonstrable manner, Best Kitchen Practices to reduce FOG loading
2. Establish an effective maintenance frequency for existing interceptor (in some cases, this may be daily)
3. Require FSE to log and report maintenance activities, and document training and implementation of best practices
4. Document FOG reduction impacts (or lack thereof) in the collection system
5. If collection system FOG impacts are not reduced, work with FSE to plan and budget for retrofit to connect all kitchen and food preparation fixtures and drains to an appropriately sized interceptor

Very high and High-loading FSEs that have all fixtures and drains connected to an interceptor, connected to FOG lines

1. Review interceptor maintenance schedule
2. Inspect interceptor prior to service pump-out to verify that grease is not bypassing the interceptor
3. If service frequency is too long (grease bypasses interceptor between pump-outs) shorten service frequency

4. Continue inspecting interceptor prior to scheduled pump-outs until the appropriate service frequency has been established, and grease isn't bypassing the interceptor between pump-outs
5. Document FOG reduction impacts in the collection system

Continue to implement the FOG Triage Plan across the service area, focusing on Very high and High FOG loading FSEs connected to FOG-impacted collection and pump station areas

FSE Plan Review

1. Develop good working relationship with municipal Development and Building Codes offices
2. Development and Building Codes office should have a comprehensive FOG Abatement packet to give to potential FSEs desiring to locate within the service area
    a. FOG Abatement packet should contain information such as the FOG brochure available from Western States Alliance and PPRC
    b. Packet should include a "FOG Loading" calculator for the FSE owner or designer or contractor to use to calculate the size of the interceptor
    c. Packet should provide guidance or regulatory language stating that all fixtures and drains within the FSE's food preparation and service areas are connected to an appropriately sized interceptor
    d. If allowed under municipal code, standards should be set for outdoor waste storage areas (trash, recycling and FOG bin storage area) to be covered, bermed to keep surface and stormwater out, with either a blind sump or catch basin drain plumbed to the interceptor

Preferred Pumper Certification:

1. Work with all area FOG pumpers to implement the Preferred Pumper Certification program
    a. Register pumpers by having all submit an application and certification form
    b. Adopt the Preferred Pumper Certification Program maintenance and reporting standards
    c. Verify that all pumpers have been informed and trained on the best practices for interceptor maintenance
    d. Pumpers will submit an FSE maintenance schedule to the municipality in a timely manner to allow municipal staff to observe the service pump-outs if necessary. Schedule for the following week shall be submitted no later than Thursday of the current week
    e. Inform all FSEs that the Preferred Pumper Certification Program is being implemented, and that Preferred Pumpers will provide the standardized level of service, and pumpers will provide the municipality with pump-out reports for the FSE
    f. If using the Swift Comply FOG data management system, instruct pumpers on system registration to allow for electronic pump-out report submission
2. Establish the pumper reporting standards and adopt the municipality responsibility standards of the Preferred Pumper Certification Program
    a. Municipality will physically, via a site inspection, verify any interceptor deficiencies noted in the pump-out reports submitted by the pumpers
    b. Municipality will provide all pumpers contact information so the pumpers can communicate with appropriate municipal staff if necessary
    c. Municipality will NEVER tell the FSE that the reason for an inspection is due to a report submitted by a pumper.

Enforcement or Incentive options:

1. Enforcement Options

    a. Warning letters
    b. Administrative monetary penalties
    c. Compliance Orders
2. Incentive Options:
    a. Small grants or loans to assist small FSEs in retrofitting
    b. Reduction in extra strength surcharges if all fixtures and drains are connected to an appropriately sized and maintained interceptor